

WHAT IS CLAIMED IS:

1 1. A method for selectively discarding packets at a packet switch
2 arranged to handle packet traffic in a network, the method comprising the steps
3 of:

- 4 (a) building an index for an arriving packet;
5 (b) accessing a location in a memory array according to the index to read
6 at least a limit value from the location;
7 (c) comparing the limit value with a status value of the switch; and
8 (d) determining whether to discard the packet according to the limit value
9 comparison.

1 2. The method of claim 1, wherein in step (b), a probability value is
2 also read from the location in the memory array and, in step (d), if it is
3 determined that the packet should be discarded, then the method comprises the
4 additional steps of:

- 5 (e) comparing the probability value with a random value; and
6 (f) discarding the packet according to the probability value comparison.

1 3. The method of claim 1, comprising the additional step of discarding
2 the packet according to the limit value comparison.

1 4. The method of claim 1, wherein in step (a), the index is built by
2 concatenating bits read from a plurality of parameters relating to header
3 information in the packet and status information of the packet switch.

1 5. The method of claim 4, wherein the parameters include one or
2 more of an Ingress Port Identifier, a Packet Class of Service, a Threshold Group
3 Number, a Global Fabric Fullness, and an Ingress Port Usage.

1 6. The method of claim 1, wherein in the status value of the switch is
2 read from a hardware register of the switch.

1 7. The method of claim 1, wherein in the status value of the switch is
2 one of an ingress port current consumption value, a destination threshold group
3 current consumption value, and a current global fabric fullness value.

1 8. The method of claim 2, wherein the probability values are
2 determined according to a scheme with a random event aspect to avoid traffic
3 congestion.

1 9. The method of claim 2, wherein the random value is based on a
2 timer value of the packet switch.

1 10. An admission control apparatus for selectively discarding packets
2 at a packet switch arranged to handle packet traffic in a network, the packet
3 switch including a plurality of ingress ports, a switch fabric, and a plurality of
4 egress ports, the admission control apparatus comprising:

5 processing means that process an incoming packet and build an index for
6 the packet;

7 memory means that store an array, the array having a plurality of
8 locations, each location storing at least a limit value, a respective location being
9 accessed according to the index to read at least the limit value from the location;
10 and

11 comparing means that compare the limit value with a status value of the
12 switch and determine whether to discard the packet according to the limit value
13 comparison.

1 11. The apparatus of claim 10, wherein a probability value is also
2 stored in the memory means and read from the location in the memory means
3 and the comparing means compares the probability value with a random value
4 when it is determined from the limit value comparison that the packet should be
5 discarded, and further comprising packet discard means to discard the packet
6 according to the probability value comparison.

1 12. The apparatus of claim 10, further comprising packet discard
2 means to discard the packet according to the limit value comparison.

1 13. The apparatus of claim 10, wherein the index is built by
2 concatenating bits read from a plurality of parameters relating to header
3 information in the packet and status information of the packet switch.

1 14. The apparatus of claim 13, wherein the parameters include one or
2 more of an Ingress Port Identifier, a Packet Class of Service, a Threshold Group
3 Number, a Global Fabric Fullness, and an Ingress Port Usage.

1 15. The apparatus of claim 10, wherein in the status value of the switch
2 is read from a hardware register of the switch.

1 16. The apparatus of claim 10, wherein in the status value of the switch
2 is one of an ingress port current consumption value, a destination threshold
3 group current consumption value, and a current global fabric fullness value.

1 17. The apparatus of claim 11, wherein the probability values are
2 determined according to a scheme with a random event aspect to avoid traffic
3 congestion.

1 18. The apparatus of claim 11, wherein the random value is based on a
2 timer value of the packet switch.

1 19. An admission control apparatus for selectively discarding packets
2 at a packet switch arranged to handle packet traffic in a network, the packet
3 switch including a plurality of ingress ports, a switch fabric, and a plurality of
4 egress ports, the admission control apparatus comprising:
5 logic that builds an index for an arriving packet;
6 logic that accesses a location in a memory array according to the index to
7 read at least a limit value from the location;
8 logic that compares the limit value with a status value of the switch; and
9 logic that determines whether to discard the packet according to the limit
10 value comparison.

1 20. The apparatus of claim 19, further comprising logic that reads a
2 probability value from the location in the memory array and logic that, when it is
3 determined that the packet should be discarded, compares the probability value
4 with a random value and discards the packet according to the probability value
5 comparison.

1 21. The apparatus of claim 19, further comprising logic that discards
2 the packet according to the limit value comparison.

1 22. The apparatus of claim 19, further comprising logic that builds the
2 index by concatenating bits read from a plurality of parameters relating to header
3 information in the packet and status information of the packet switch.

1 23. The apparatus of claim 22, wherein the parameters include one or
2 more of an Ingress Port Identifier, a Packet Class of Service, a Threshold Group
3 Number, a Global Fabric Fullness, and an Ingress Port Usage.

1 24. The apparatus of claim 20, wherein the probability values are
2 determined according to a scheme with a random event aspect to avoid traffic
3 congestion.

4 25. The apparatus of claim 20, wherein the probability values are
5 determined according to a scheme with a random event aspect to avoid traffic
6 congestion.

1 26. The apparatus of claim 20, wherein the random value is based on a
2 timer value of the packet switch.